

Applicant : Marohl et al.
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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A retaining ring comprising:
a generally annular body having a top surface, a bottom surface, an inner diameter surface, and an outer diameter surface, wherein the bottom surface is configured to contact a polishing pad during polishing and the outer diameter surface includes a vertical surface, a tapered section and an outwardly projecting flange having a lower surface parallel to the top surface of the annular body, the vertical surface is adjacent to the bottom surface and the tapered section extends upwardly and outwardly from the vertical surface to the lower surface of the flange.
- 2-4. (Canceled)
5. (Previously Presented) The retaining ring of claim 1, wherein the tapered section forms an angle of about 60° relative to a plane parallel to the bottom surface.
6. (Previously Presented) The retaining ring of claim 1, wherein the inner diameter surface includes a tapered section having a circumference that is greater toward the top surface than toward the bottom surface.
7. (Currently Amended) The retaining ring of claim 6, wherein the inner diameter surface includes a vertical section between the tapered section and the bottom surface.

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8. (Previously Presented) The retaining ring of claim 6, wherein the tapered section of the inner diameter surface forms an angle of about 80° relative to the top surface.

9. (Previously Presented) The retaining ring of claim 1, wherein the bottom surface includes a plurality of channels.

10. (Original) The retaining ring of claim 1, wherein the top surface includes a plurality of holes formed therein.

11. (Original) The retaining ring of claim 10, wherein the top surface includes eighteen holes.

12. (Original) The retaining ring of claim 1, further comprising at least one drain hole extending from the inner diameter surface to the outer diameter surface.

13. (Original) The retaining ring of claim 1, wherein the inner diameter surface has a radius of about 300 mm adjacent the bottom surface.

14. (Previously Presented) A retaining ring for a carrier head for use in chemical mechanical polishing having a substrate receiving recess, comprising:

a generally annular lower portion having a bottom surface for contacting a polishing pad, wherein the bottom surface includes a plurality of channels; and

a generally annular upper portion secured to the lower portion, the upper portion having an outer diameter with an annular projection;

wherein the lower portion and the upper portion each have a tapered section along the outer diameter and the tapered sections form a unitary tapered section when the upper and lower portions are secured together.

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15. (Original) The retaining ring of claim 14, wherein the annular projection comprises a horizontal lower surface, a horizontal upper surface and a vertical cylindrical outer surface connecting the lower surface and the upper surface.

16. (Original) The retaining ring of claim 14, wherein the lower portion has an inner diameter surface with a radius of about 300 millimeters.

17. (Previously Presented) The retaining ring of claim 14, wherein the unitary tapered section has a greater circumference toward the upper portion than toward the lower portion.

18. (Original) The retaining ring of claim 14, wherein the lower portion and the upper portion are formed as a single unit.

19. (Previously Presented) A retaining ring for a carrier head for use in chemical mechanical polishing having a mounting surface for a substrate, comprising:

an inner diameter with a continuously tapered surface and a cylindrical vertical surface, wherein the continuously tapered surface is adjacent to an upper surface of the retaining ring and the cylindrical vertical surface is adjacent to a bottom surface of the retaining ring, the inner diameter of the retaining ring is smaller toward a bottom surface than toward a top surface of the retaining ring and the bottom surface is configured to contact a polishing pad during polishing.

20. (Canceled)

21. (Previously Presented) The retaining ring of claim 19, wherein the retaining ring includes an outer diameter with a flange.

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22. (Previously Presented) The retaining ring of claim 1, wherein the greatest circumference of the retaining ring is at the flange.

23. (Previously Presented) The retaining ring of claim 14, wherein the lower portion includes a vertical surface adjacent to the bottom surface.